Journal of Applied Communications

Volume 65 | Issue 4 Article 4

The Literature of Ag Communication: A Partial View, 1970-1979

Chandra Pradha

James F. Evans

Recommended Citation

Pradha, Chandra and Evans, James F. (1982) "The Literature of Ag Communication: A Partial View, 1970-1979," *Journal of Applied Communications*: Vol. 65: Iss. 4. https://doi.org/10.4148/1051-0834.1767

The Literature of Ag Communication: A Partial View, 1970-1979

Abstract

Pressures for better access to the literature of agricultural communication are growing, from several directions.

Referred Article

The Literature of Ag Communication

A Partial View, 1970-1979

Chandra Pradha and James F. Evans

Pressures for better access to the literature of agricultural communication are growing, from several directions. As communications planning becomes more sophisticated, practitioners become more interested in basing their decisions upon relevant facts and insights about audiences, media and other aspects that affect planning.

Increasing amounts of agricultural communication research are being conducted throughout the world, and the findings sometimes have broad interest. For example, experiences in India concerning satellite communications with rural residents are relevant to communicators elsewhere.

Furthermore, the demand for information about agricultural communication increases as teaching programs expand. Most of today's degree programs in agricultural journalism and agricultural communication are less than 20 years old (Evans and Bolick, p. 32). Enrollment in such programs has more than doubled within the past 10 years.

Prabha **is a graduate research assistant in agricultural communication at the University of Illinois;** ***Evans*** **is professor of agricultural communications there.** **The authors acknowledge with thanks funding from the Research Board, Agricultural Experiment Station and Title XII Strengthening program, University of Illinois at Urbana-Champaign. Assistance from Professor F. W. Lancaster, Graduate School of Library and Information Science, also is appreciated.**

Some efforts have been made to assemble bibliographies related to agricultural communication. Recent examples include bibliographies about the role of communication and attitudes in small farm programs (Colette and Easley), agricultural market information (Kroupa, Burnett and Johnson), mass communication and journalism (Scherer) and agricultural journalism (Swanson). Earlier examples include the annual *Review of Extension Research* published by the U. S. Department of Agriculture; the series, *Communications Studies Reported by Land-Grant Colleges and Universities and USDA*, prepared by the American Association of Agricultural College Editors; and a bibliography on the diffusion of innovations (Rogers and Smith).

There is a common assumption that the problem is being solved by the development of electronic databases such as AGRICOLA, the on-line system of the National Agricultural Library; CAB, the on-line system of the Commonwealth Agricultural Bureaux; and others. However, such systems are limited in several ways.

1. They provide selective coverage, with emphasis on scholarly references. They include relatively little trade literature, for example, or other such materials that might be helpful to the practitioner.

2. No existing database contains a majority of the documents about agricultural communication. A recent examination of four databases—AGRICOLA, BIOSIS, CAB and SCISEARCH—showed an actual citation overlap of 20 percent or less with regard to the literature in agriculture and forestry (Brooks, p. 41). The author concluded that multi-database searching is mandated if one is going to conduct a thorough search.

3. The literature of agricultural communication is scattered far beyond the agricultural databases. Part of it is into the agricultural sciences, part reaches into the social sciences (such as psychology, sociology, communications, education and others), part into the library and information sciences, part into the physical sciences and so on.

As a result, practitioners, researchers, students and teachers in agricultural communication report great difficulty in finding information about their field of work and study. They seem to be hunting by horse-and-buggy methods, as one observer puts it, (Bernier, p. 445).

The result: gaps in knowledge about agricultural communications systems, audiences, processes and methods; delays in the flow of good ideas, and frustrations among those who would like to know more about communications related to agriculture and rural development.

The Study

An analysis was conducted during 1981 to address these questions:

How large is the body of literature involving agricultural communications?

At what rate is new agricultural communication literature being produced?

Who are the producers of this literature?

What forms does it take?

How scattered is it?

What written sources will yield it?

An analytic approach known as bibliometrics was used for this study. Bibliomettrics is defined as the application of mathematics and statistical methods to books and other media of communication (Pritchard, p. 349). It is applied to the study of the literature within a given field and in particular to identification of productive sources within a field.

Five selected databases were searched on-line to tape the existing body of literature about agriculture communication:

Agricultural On-Line Access (AGRICOLA)

Commonwealth Agricultural Bureaus (CAB)

Social Science Citation Index (SSCI)

Library Science and Information Science Abstracts (LISA)

Educational Resources Information Center (ERIC)

On-line searches covered the 10-year period from 1970 through 1979.

Each item retrieved was judged for relevance based on criteria established by a panel of University of Illinois faculty members representing the fields of agricultural communication and library and information science. The panel established the following criteria for inclusion of an item as an agricultural communications citation:

1. The item must contain both a communication component and an agricultural or rural component.

2. Communication was specified to include all media, mass and personal, and all aspects including systems,

audiences, processes, methods, effects and others. Communication activities in formal, credit-awarding school settings were excluded.

3. Agriculture was defined to include plant science, soils and fertilizers, pesticides, animal industry, veterinary medicine, agricultural economics, agricultural engineering, forestry, plant pathology, entomology, horticulture, water resources, rural sociology, food science and other related subject fields. Items dealing with human nutrition were not included in this search.

As defined, agricultural communication literature covered topics such as: information-seeking and media-use patterns of agricultural producers; communication among agricultural researchers; rural media institutions and their performance; communication methods, practices and skills used in agriculture-related activities; effects of media in agricultural settings; rural-urban communication, including efforts by producers to promote the consumption of farm products; agricultural applications of new communication technologies; and information in agricultural development. Decisions about relevancy of each citation were verified by a subject matter specialist.

References to all forms of publication were included: periodicals and other serials; monographs, including books and unpublished reports, conference papers, dissertations and even a few audio visual materials. References to abstracts or reviews were excluded. When a reference occurred in two or more databases it was counted only once. However, when a conference proceeding was indexed under editor and contributors, both the editor entry and each contributor entry were included.

The form of publication, whenever not apparent, was identified using several reference sources including OCLC bibliographic utility records on-line. Likewise, missing language and country of publication data were filled in. Year of publication was present in all records.

The on-line search was carried out between May 13 and June 16, 1981.

Findings

Number and on-line sources of references

On-line searching resulted in a final pool of 1,505 references identified as agricultural communication.

Of the total, AGRICOLA provided approximately 73 percent; CAB 13 percent; ERIC 11 percent; and SSCI and LISA about 1 percent each.

Growth of agricultural communcation literature

Annual production and cumulative growth figures are show in Table 1. Numbers of all references increased at an average rate of about 14 percent a year between 1970 and 1977. An apparent decline in the rate of literature growth for 1978 and 1979 could be due to the time lag between the appearance of a primary publication and its indexing in a secondary source.

Table 1. Annual Production and Cumulative Growth of Agricultural Communications References, 1970-1979

	Serials		Nonserials		All Literature	
Year	Annual Total	Cumulative Total	Annual Total	Cumulative Total	Annual Total	Cumulative Total
1970	57	—	34	—	91	—
1971	58	115	35	69	93	184
1972	61	176	51	120	112	296
1973	77	253	54	174	131	427
1974	108	361	67	241	175	602
1975	115	476	47	288	162	764
1976	149	625	58	346	207	971
1977	167	792	62	408	229	1,200
1978	135	927	50	458	185	1,385
1979	85	1,012	35	493	120	1,505

Dispersion of literature: form

Tables 2 and 3 provide details about yearly production and cumulative growth of serial literature and specific types of nonserial literature.

Serial literature accounted for two-thirds of all agricultural communications references identified in this study and increased more rapidly than did nonserial literature. Most (80 percent) of the serial literature came from periodicals.

Reports made up the predominant form of nonserial literature identified in this analysis. Of all nonserial references, 31 percent consisted of reports, 28 percent books, 24 percent conference proceedings and 7 percent theses and dissertations. Ten percent of nonserial references were incomplete.

Table 2. Annual Production and Cumulative Growth of Serial References in Agricultural Communications, 1970-1979

	Periodicals		Other Serials		All Serials	
Year	Annual Total	Cumulative Total	Annual Total	Cumulative Total	Annual Total	Cumulative Total
1970	51	—	6	—	57	—
1971	51	102	7	13	58	115
1972	47	149	14	27	61	176
1973	68	217	9	36	77	253
1974	80	297	28	64	108	361
1975	97	394	18	82	115	476
1976	113	507	36	118	149	625
1977	128	635	39	157	167	792
1978	107	742	28	185	135	927
1979	67	809	18	203	85	1,012

Forms of agricultural communication literature were compared with findings of an analysis by Buntrock of the literature of agricultural economics and rural sociology. Buntrock's analysis involved 15,000 references drawn from these sources: *World Agricultural Economics and Rural Sociology Abstracts* (UK); *Informationsdienstkartei fur Agrarpolitik, Landwirtschaftliches Marktwesen und Landliche Soziologie* (Germany); *Bibliography of Agriculture* (USA); and *Agricultural Aspects of the Common Market* (Netherlands).

Table 4 shows the extent to which serials dominated both kinds of literature. Although specific percentages of each form differed, rankings of forms were identical. The apparent differences in the proportion of each form might have arisen, in part, from employing different criteria for categorization. This study analyzed 1,505 references, only one-tenth the number used by Buntrock, but the findings of both studies are similar.

Dispersion of literature: language

The relatively high proportion of the English language publications exhibited in Table 5 seems to reflect the language bias of the databases, since all of the five used in this study are from English speaking countries, the United Kingdom and the United States. Because the subject of

https://newprairiepress.org/jac/vol65/iss4/4
DOI: 10.4148/1051-0834.1767

Table 3. Annual Production and Cumulative Growth of Nonserial References in Agricultural Communications, 1970-1979

Year	Theses		Conference Proceedings		Books		Reports		Incomplete Nonserial References	All Nonserials	
	Annual Total	Cumulative Total	Annual Total	Cumulative Total	Annual Total	Cumulative Total	Annual Total	Cumulative Total		Annual total	Cumulative Total
1970	2	—	7	—	9	—	11	—	5	34	—
1971	4	6	5	12	8	17	15	26	3	35	69
1972	1	7	23	35	15	32	8	34	4	51	120
1973	2	9	11	46	14	46	20	54	7	54	174
1974	2	11	24	70	14	60	20	74	7	67	241
1975	3	14	9	79	18	78	12	86	5	47	288
1976	1	15	7	86	21	99	24	110	5	58	346
1977	6	21	17	103	18	117	16	126	5	62	408
1978	8	29	7	110	11	128	17	143	7	50	458
1979	4	33	9	119	11	139	8	151	3	35	493

Table 4. A Comparison of the Dispersion of Agricultural Communications Literature, 1970-1979, by Form with that of Agricultural Economics and Rural Sociology (1969)*

Form	Agricultural Communications (N = 1,505)	Agricultural Economics and Rural Sociology (N = 15,000)
Serials	67%	80%
Reports	10	13
Monographs**	9	5
Conference Proceedings	8	2
Theses	2	—
Unidentified	4	—
Total	100%	100%

*Buntrock data
**This category is referred to as books in this study.

agricultural communication has local overtones, it is likely that the literature of this field is dispersed over more languages than a study of documented sources would reveal.

Language dispersion of 809 periodical references was compared with Lawani's language date on periodicals in tropical and subtropical literature (Lawani, 1972). The share of periodicals in English in both studies was nearly the same. The Lawani data showed a higher percentage of publications in French, Spanish and Portuguese.

Table 5. Dispersion of Agricultural Communications Literature, 1970-1979, by Language

Language	Number and Percentage	
English	1,102	73%
German	79	5
Spanish	53	4
French	39	3
Russian	37	2
Other Languages (Totaling 22, each contributing less than 2 percent)	195	13
Total	1,505	100%

Dispersion of literature: country of origin

Table 6 shows that six countries accounted for 59 percent of the agricultural communication literature identified in the five databases. The United States and India were the largest producers, accounting for 45 percent of all literature.

This study, like Buntrock's study of agricultural economics and rural sociology literature (Table 7), showed that about 20 percent of periodical titles originated in the United States (Buntrock, p. 21). The United States, Germany and the United Kingdom ranked high in both studies. India ranked considerably higher as a source of agricultural communication periodical literature than of periodical literature about agricultural economics and rural sociology. Agricultural communication literature came from 51 countries, the Buntrock data from 56 countries.

Table 6. Leading Producers of Agricultural Communications Literature, 1970-1979, by Country

Name of Country	Number and Percentage of Serials (N = 1,012)		Number and Percentage of Nonserials (N = 493)		Number and Percentage of All Literature (N = 1,505)		Cumulative Percentage
USA	354	35%	142	29%	496	33%	33%
India	159	16	20	4	179	12	45
Germany	60	6	13	3	73	5	50
United Kingdom	49	5	11	2	60	4	54
Australia	31	3	11	2	42	3	57
Soviet Union	22	2	15	3	37	2	59
Unpublished*	—	—	67	14	67	4	63
Other Countries (totalling 54, each contributing less than 2 percent)	337	33	214	43	551	37	100

*Mostly reports distributed by Educational Resources Information Center.

Dispersion of literature: producer organizations

Universities and government bodies were the leading producers of non-serial literature in agricultural communication during the 10-year period. Table 8 shows that these two categories produced more than one-half of all such literature.

Table 7. A Comparison of Dispersion of periodical Titles in Agricultural Communications, 1970-1979, with that of Periodical Titles in Agricultural Economics and Rural Sociology

	Agricultural Communications		Agricultural Economics and Rural Sociology (Bentrock data)		
Name of Country	Number of Periodical Titles (N = 336)	Percent of Periodical Titles	Number of Periodical Titles (N = 2,109)	Percent of Periodical Titles	Rank Order of Countries in Buntrock
1. USA	71	21%	404	19%	1
2. India	40	12	53	3	9
3. Germany	25	7	305	15	2
4. United Kingdom	21	6	170	8	3
5. Soviet Union	13	4	68	3	6
6. Canada	11	3	19	—	20
7. France	10	3	150	7	4
8. Australia	9	3	31	1	12
9. International	9	3	25	1	—
10. Netherlands	8	2	90	4	5
11. Poland	7	2	23	1	17
Other Countries (each contributing less than 2 percent)	78	24	—	—	—
Unidentified	34	10	225	11	—

https://newprairiepress.org/jac/vol65/iss4/4
DOI: 10.4148/1051-0834.1767

Table 8. Producers of Nonserial Literature in Agricultural Communications, 1970-1979

	Theses	Conference Proceedings	Books	Reports	Unidentified	Total Number and Percentage	
Universities	33	29	28	57	1	148	30%
Government							
USA (Federal, State)	—	7	8	39	2	56	11
Other Countries	—	15	20	21	3	59	12
Commercial Publishers	—	5	66	—	—	71	14
National Organizations, Societies (not limited to the US)	—	47	3	14	—	64	13
International Agencies	—	10	14	19	2	45	9
Unidentified	—	6	—	1	43	50	10

Detailed analyses of periodicals

1. Rank order of periodicals.

Results suggest that a person wishing to find agricultural communication periodical literature in the databases used for this 10-year analysis would need to follow more than 300 periodicals. Table 9 shows that 336 different periodicals contained articles about agricultural communication during that time.

The top periodical, *Indian Journal of Extension Education*, accounted for only 6 percent of the 809 articles about agricultural communication. The top 10 provided 28 percent of all articles. They are identified in Table 10. Remaining articles were scattered among 326 periodicals, each of which carried fewer than 10 articles about the subject.

Table 9. Scatter of Periodical References over Periodical Titles in Agricultural Communications, 1970-1979

Number of Periodical Titles	Number of References Per Periodical Title	Percentage of Total Number References	Cumulative Percentage of Periodical References
1	50	50	6%
1	38	38	11%
1	27	27	14%
1	24	24	17%
1	21	21	20%
1	18	18	22%
1	17	17	24%
1	11	11	25%
2	10	20	28%
2	9	18	30%
4	8	32	34%
5	7	35	38%
6	6	36	43%
6	5	30	47%
10	4	40	52%
24	3	72	60%
51	2	102	73%
218	1	**218**	100%
336		809	

Table 10. Rank Order of Top Ten Periodical Titles in Agricultural Communications Literature, 1970-1979

Rank	Title of Periodical	Number of References Contributed
1	Indian Journal of Extension Education (India, English)	50
2	Agricultural Education Magazine (USA, English)	38
3	Madras Agricultural Journal (India, English)	27
4	Extension Review (formerly Extension Service Review) (USA, English)	24
5	ACE Quarterly (USA, English)	21
6	Ausbildung and Beratung in Land-und Hauswirtschaft (West Germany, German)	18
7	American Journal of Agricultural Economics (USA, English)	17
8	Foreign Agriculture (USA, English)	11
9	Mysore Journal of Agricultural Sciences (India, English)	10
10	Rural Sociology (USA, English)	10
	Total articles from top 10 periodicals	226

2. Zone analysis.

Bradford observed that if periodicals are arranged in the decreasing order of productivity, based on the number of relevant references they contribute to a given subject, and the number of references is marked off into equal zones, then the number of periodical titles contributing to each succeeding zone will increase in a geometric ratio (Bradford, pp. 144-159).

In a perfect Bradford scatter, 808 articles might be distributed thus:

Zone 1	202 articles	3 contributing periodicals (3^1)
Zone 2	202 articles	9 contributing periodicals (3^2)
Zone 3	202 articles	27 contributing periodicals (3^3)
Zone 4	202 articles	81 contributing periodicals (3^4)
Total	808 articles	120 contributing periodicals

Table 11 shows that the scatter of periodical literature in agricultural communication is greater than would be expected in a normal distribution. Actual number of contributing periodical titles in the second and third zones is greater than estimated values, indicating a wide scatter.

Another technique, graphic analysis, was applied to the findings as a means of assessing the degree of scatter. Findings confirmed a greater-than-normal scatter of periodical literature involving agricultural communication (Lawani, 1973).

Table 11. Bradford Distribution of Agricultural Communications Periodical Literature, 1970-1979, into Equal Zones of Productivity

	Number of References	Actual Number of Contributing Periodicals	Estimated Number of Contributing Periodicals*
Zone (1)	206	8	—
Zone (2)	199	32	24 (8×3)
Zone (3)	202	94	72 (8×3^2)
Zone (4)	202	202	216 (8×3^3)

*Estimates based on the number of periodical titles contributing to the actual first zone.

Summary and Conclusions

Results of this analysis of recent agricultural communication literature suggest the following:

1. The 1,505 citations identified in a 10-year search of five on-line databases suggest that a substantial body of literature about agricultural communication exists. More extensive searching is likely to reveal considerably more of such literature, particularly in the trade and professional information sources which these five databases do not tap.
2. Within the sources analyzed, the literature of agricultural communication increased at an average rate of about 14 percent a year between 1970 and 1979, in a linear pattern.
3. Serial literature (found mainly in periodical form) accounted for two-thirds of all agricultural communication literature identified.

4. English was the dominant language of such literature, as might be expected from a search involving databases that are located in English speaking countries.

5. Six countries—United States, India, Germany, United Kingdom, Australia and the Soviet Union—accounted for 59 percent of the agricultural communication literature identified. Two of those countries, the United States and India, accounted for 45 percent.

6. Universities and government bodies were the leading producers of nonserial literature in agricultural communication during the 10-year period. These two groups accounted for about 53 percent.

7. The wide scatter of agriculture communication literature is illustrated by results of an analysis of the literature found in periodicals. Findings showed that 336 periodicals contained references about agricultural communication. The top-ranked periodical provided only 6 percent of all articles about agricultural communication; the top 10 provided only 28 percent of all articles. There is no nucleus of periodicals devoted essentially to agricultural communication.

Several limitations of this study should be noted. First, the reliability of the findings must remain tentative until a more complete measure of the body of agricultural communication literature is available.

Second, to the extent that the source data used in this study reflect the language and geographical bias of the databases from which they were drawn, these findings cannot be seen as fully representing the total world literature of agricultural communication.

Third, the reliability of bibliometric analysis depends on the completeness and accuracy of bibliographic description. While it may be possible to eliminate references that are incomplete and not easily identified from other sources, such exclusion would bias the final results. Even though a persistent effort was made to complete as many missing data as possible, a column of unidentified references had to be included in many tables.

Another limitation, noted earlier, comes from the fact that findings characterize only the body of literature which is documented and indexed. It has been estimated that abstracting services cover only about two-thirds of total output (Martyn).

Finally, in a field where "ephemeral," "transient," and "commercial" information is important in forms often not collected by even the major research libraries, it must be noted that the present findings characterize only those forms of literature which are traditionally documented.

These limitations suggest that the findings reported here probably underestimate both the amount and scatter of existing literature about agricultural communication. If so, what are the implications of such scatter? How interested are persons who might use such information if they had easier access to it?

In an effort to measure the current level and nature of such interest, the authors are undertaking a nationwide survey. The mail survey, begun early in 1982, involves a sample of practitioners, teachers and researchers whose interests span agricultural communication activities: reporting, editing, broadcasting, public relations, photography, graphic arts, publishing, advertising, information program management and others. Results are expected late in 1982.

If results show a broad base of active interest among potential users, the next step might logically involve questions about how to bring together the literature and make it available. For example, who would gather it and by what procedures? What system would be appropriate for storing, processing and retrieving information? What kinds of information services should be available to users? What financial base is appropriate?

These steps seem valuable because as the literature base for agricultural communication expands, efforts to make such information more readily available to users become increasingly important.

References

Bernier, Charles L., "Reading overload and cogency," *Information Processing and Management*, 14 (1978), 445-452.

Bradford, S.C., *Documentation*. London: Crosby and Lockwood, 1953.

Brooks, K., "A comparison of the coverage of agricultural and forestry literature on Agricola, Biosis, CAB and SciSearch," *Database*, March 1980, 38-69.

Buntrock, H., "A statistical analysis of literature in agricultural economics and rural sociology," *International Association of Agricultural Librarians and Documentalists Quarterly Bulletin*, 16, I (1972), 15-28.

Colette, W. Arden and Gail Easley, "A bibliography: the role of communication and attitudes in small farm programs," *Rural Development Bibliography Series No. 4*, Southern Rural Development Center, Mississippi State, Mississippi. September 1977. 94 pp.

Evans, James F. and James G. Bolick, "Today's curricula in agricultural journalism and communications," *Agricultural Communicators in Education Quarterly*, 65, 1 (January-March 1982), 29-38.

Kroupa, Eugene A., Claron Burnett and John K. Johnson, *Agricultural Market Information: Collection, Dissemination and Use in Decision-Making, An Annotated Bibliography*. Department of Agricultural Journalism, University of Wisconsin, Madison. July 1976. 56 pp.

Lawani, S. M., "Periodical literature of tropical and subtropical agriculture," *Unesco Bulletin for Libraries*, 26, 2 (1972), 88-93.

Lawani, S. M., "Bradford's law and the literature of agriculture," *International Library Review*, 5 (1973), 341-350.

Martyn, John, "Tests on abstracts journals," *Journal of Documentation*, 23, 1 (1967), 45-70.

Pritchard, Alan, "Statistical bibliography or bibliometrics?," *Journal of Documentation*, 24, 4 (1969), 348-349.

Rogers, Everett M. and Leticia Smith, "Bibliography on the diffusion of innovations," *Diffusion of Innovations Research Report No. 3*, Department of Communication, Michigan State University. July 1965. 101 pp.

Scherer, Clifford, *Bibliography: Mass Communication and Journalism*. Educational Materials Project, North Central Region, Cooperative Extension Service, Iowa State University. April 1980. 186 pp.

Swanson, Harold B., "Bibliography for agricultural journalism and related courses and seminars," *Research and Paper Series 6*. Department of Information and Agricultural Journalism, University of Minnesota. March 1976. 34 pp.